

FIG. 1
Prior Ant

FIG. 2

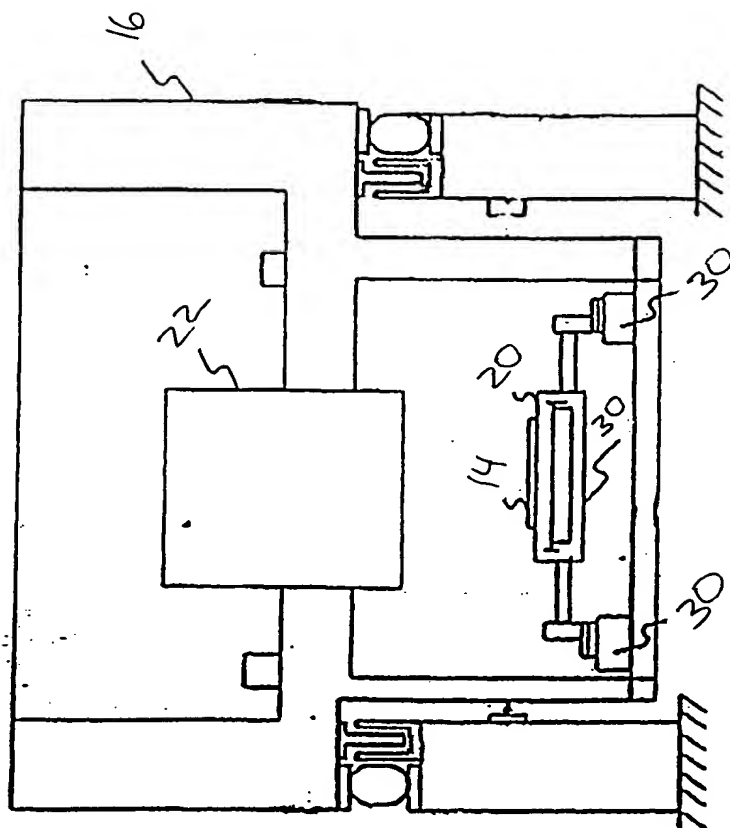


FIG. 2
Prior Art

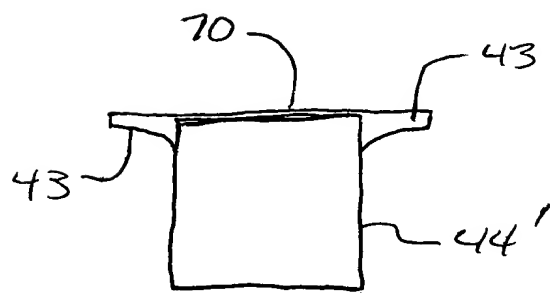
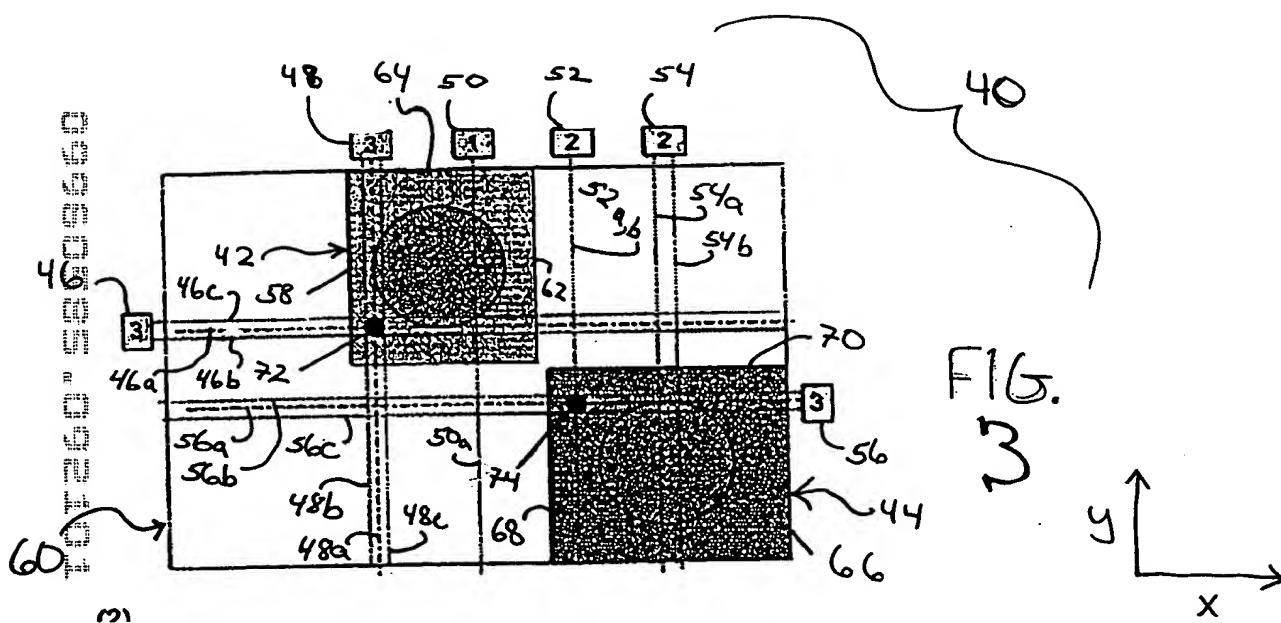


FIG. 3a

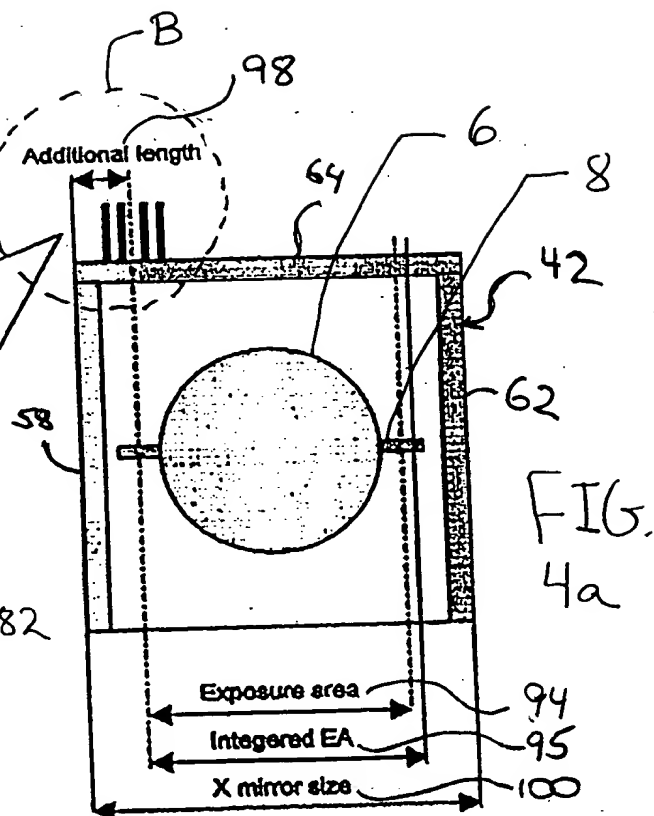
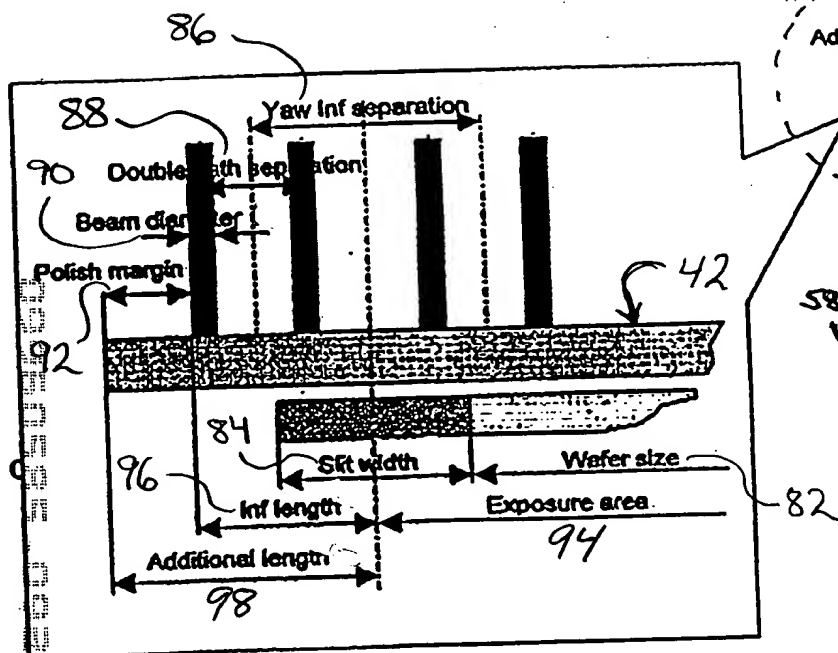


Diagram illustrating a cross-sectional view of a multi-stage assembly, likely a particle detector or accelerator component, showing various stages and dimensions.

Dimensions and Labels:

- 48:** Dimension indicating the width of the top section.
- 50:** Dimension indicating the width of the central section.
- 52:** Dimension indicating the width of the bottom section.
- 88:** Dimension indicating the width of the top section.
- 90:** Dimension indicating the width of the central section.
- 92:** Dimension indicating the width of the bottom section.
- 108:** Dimension indicating the width of the bottom section.
- 108 Beam Clearance:** Label indicating the clearance for the beam.
- Double path:** Label indicating the path of the beam.
- +Beam dia:** Label indicating the beam diameter.
- Polish margin:** Label indicating the margin for polishing.
- Stage A:** Label indicating the first stage of the assembly.
- Stage B:** Label indicating the second stage of the assembly.
- Stage B x-size:** Label indicating the size of Stage B.
- 80:** Dimension indicating the width of the bottom section.
- 42:** Dimension indicating the width of the central section.
- 44:** Dimension indicating the width of the bottom section.

FIG. 5

09060555 020401

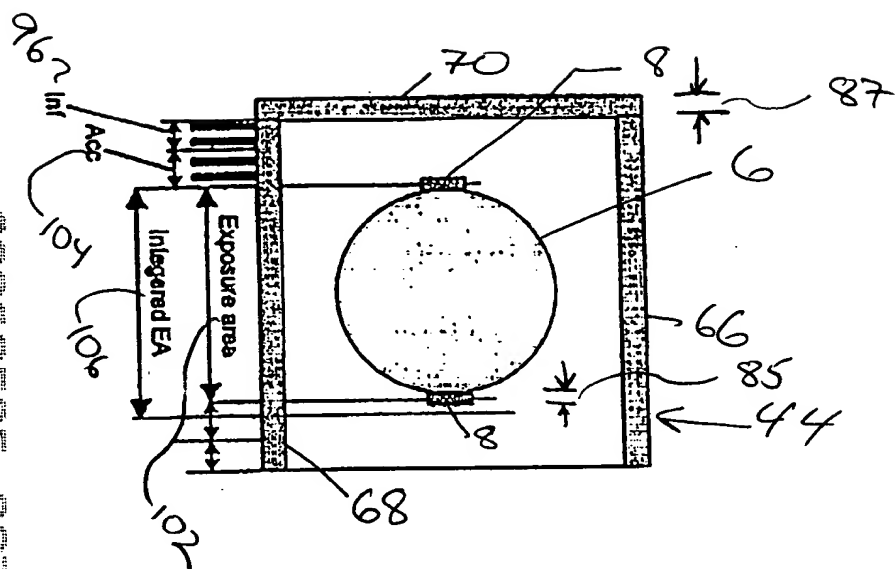


FIG. 6

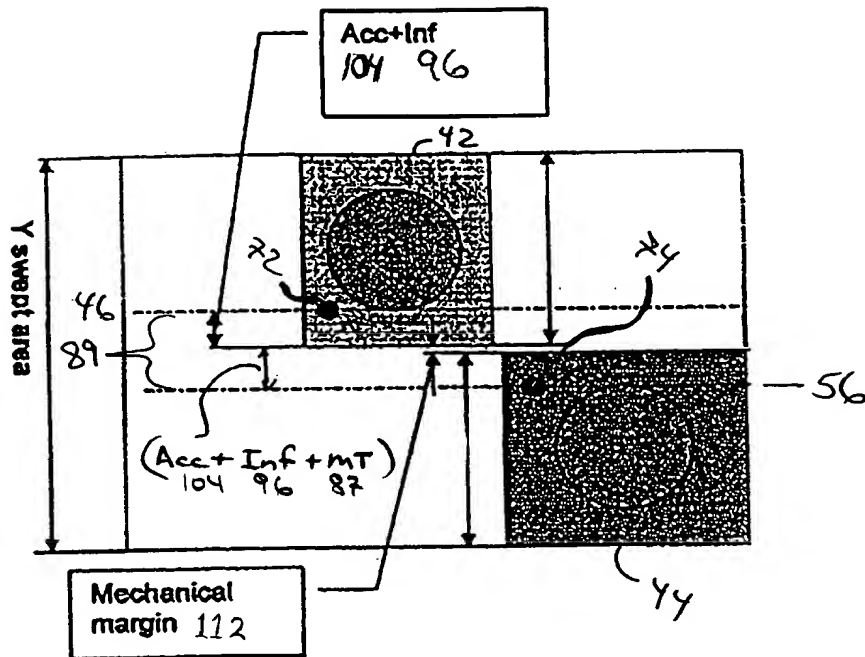


FIG. 7

09060555 002101

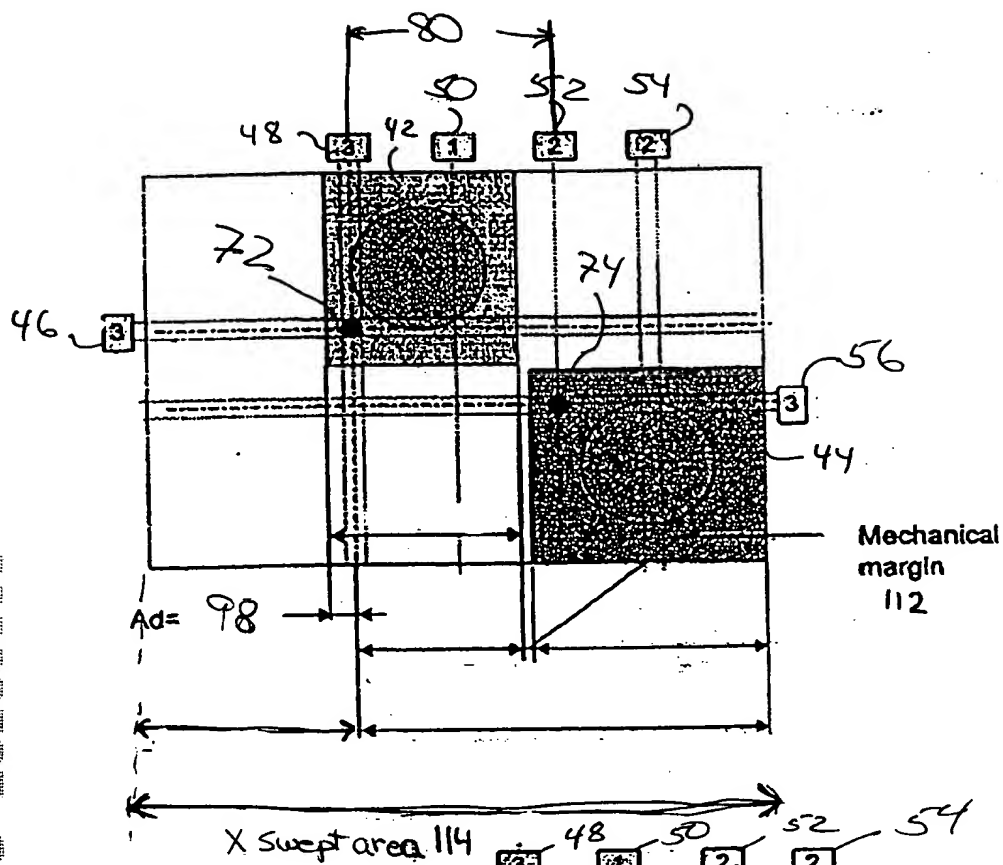


FIG. 8

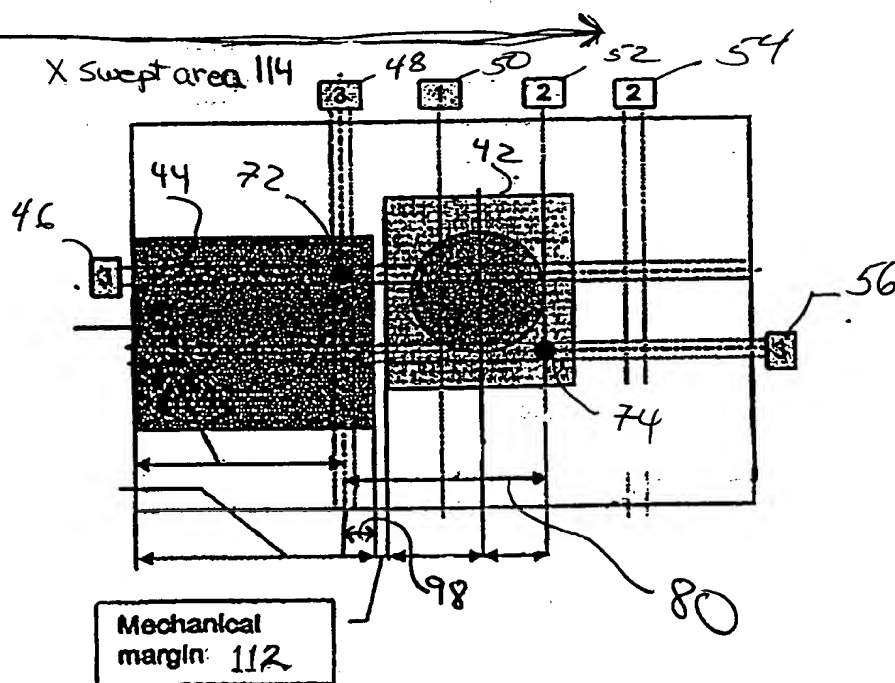


FIG. 9

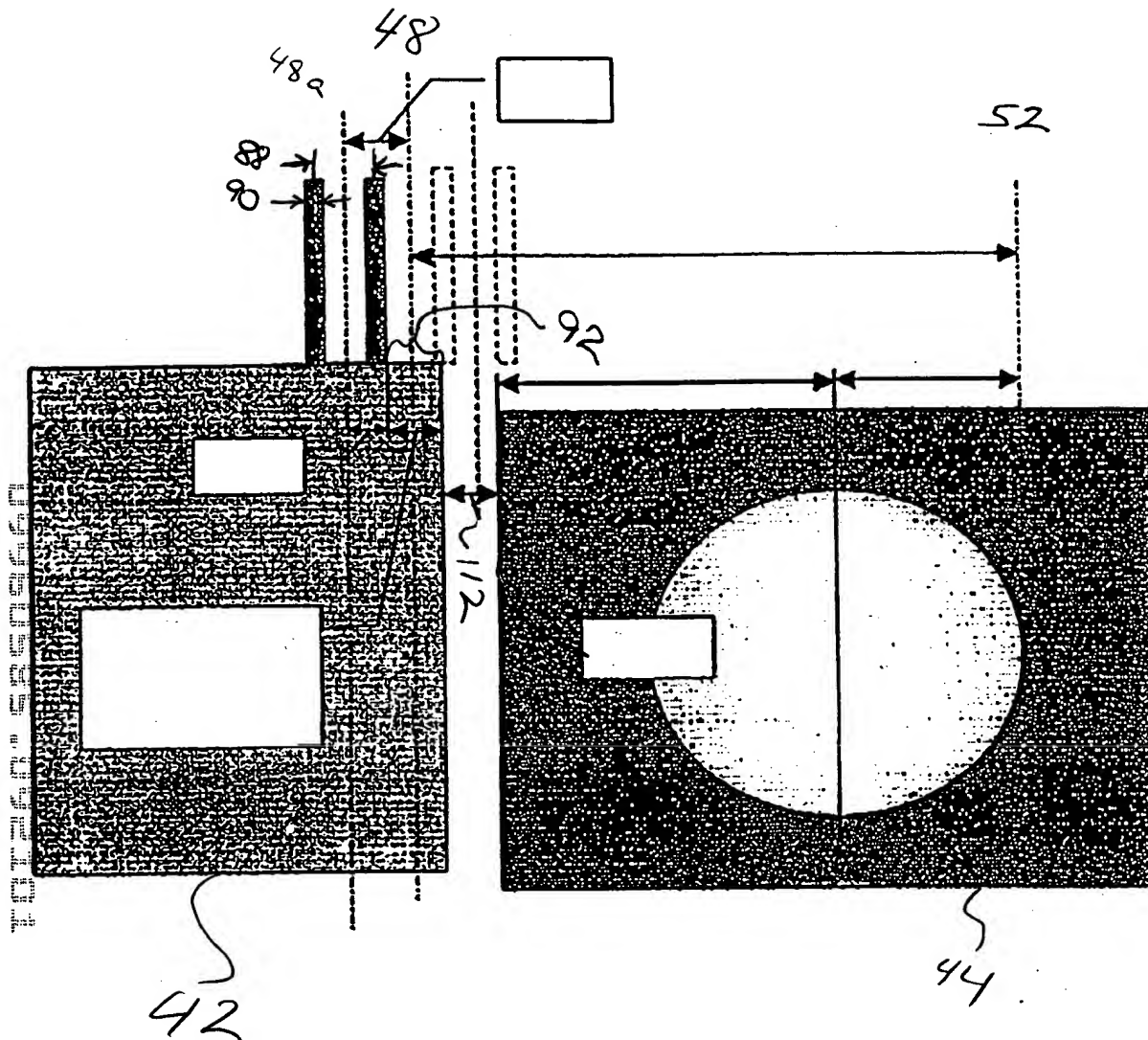


FIG. 10

Technical drawing of a mechanical assembly, showing three views: Top View, Front View, and Side View.

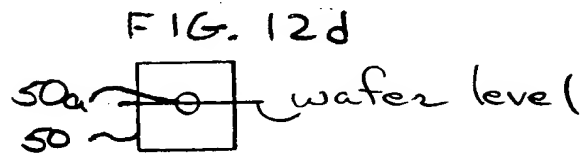
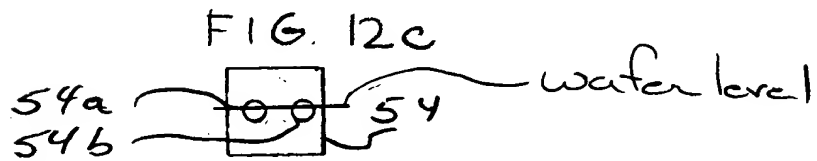
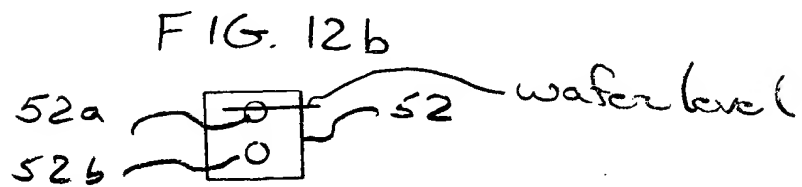
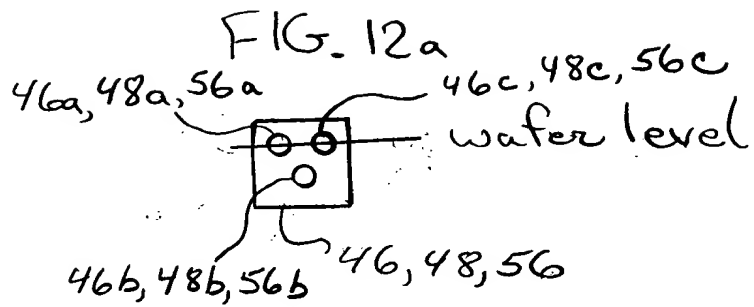
Top View: A square plate with a central circular hole. Dimensions include 80 (overall width), 54 (hole diameter), and 80 (overall height). The plate is labeled "PL 48".

Front View: A square plate with a central circular hole. Dimensions include 80 (overall width), 52 (hole diameter), 54 (hole diameter), 88 (overall height), 91 (hole diameter), 82 (overall width), 44 (hole diameter), and 42 (hole diameter). The plate is labeled "FIA".

Side View: A square plate with a central circular hole. Dimensions include 80 (overall width), 52 (hole diameter), 54 (hole diameter), 88 (overall height), 91 (hole diameter), 82 (overall width), 44 (hole diameter), and 42 (hole diameter). The plate is labeled "Loading position".

FIG. 11

Loading position



Wafer stage 42: Perform loading. Monitor X position by 56a changing to 56, Y position by 54 and Yaw by 54.
Wafer stage 44: Stopped to begin exposure sequence if loaded with a wafer. Monitor X position by 46, Y position by 48, and Yaw by 48.
See Fig. 14(a)

200

Wafer stage 42: Start EGA. Change to monitor Y position by 52 and Yaw by 56. Halt movement when necessary to avoid disturbing stage 44.
Wafer stage 44: Continue exposing if loaded.
See Fig. 14(b)

202

Wafer stage 42: Continue EGA. Change to monitor Y position by 50.
Wafer stage 44: Stopped at the end of the exposure sequence.
See Fig. 14(c)

204

Wafer stage 42: End EGA. Begin switching in the Y direction. Change to monitor Yaw by 52 and 50.
Wafer stage 44: Switch in the Y direction.
See Fig. 14(d)

206

Wafer stage 42: Switch in the Y direction. Change to monitor X position by 56a.
Wafer stage 44: Wait to switch in the Y direction. Change to monitor Y position by 56c when 56c becomes available.
See Fig. 14(e)

208

Wafer stage 42: Wait in the Y direction. Change to monitor X position by 46 and Yaw by 46 when 46 becomes available.
Wafer stage 44: Switch in the Y direction.
See Fig. 14(f)

210

Wafer stage 42: Switch in the Y direction.
Wafer stage 44: Switch in the Y direction. Change to monitor X position by 56 and Yaw by 56.
See Fig. 14(g)

212

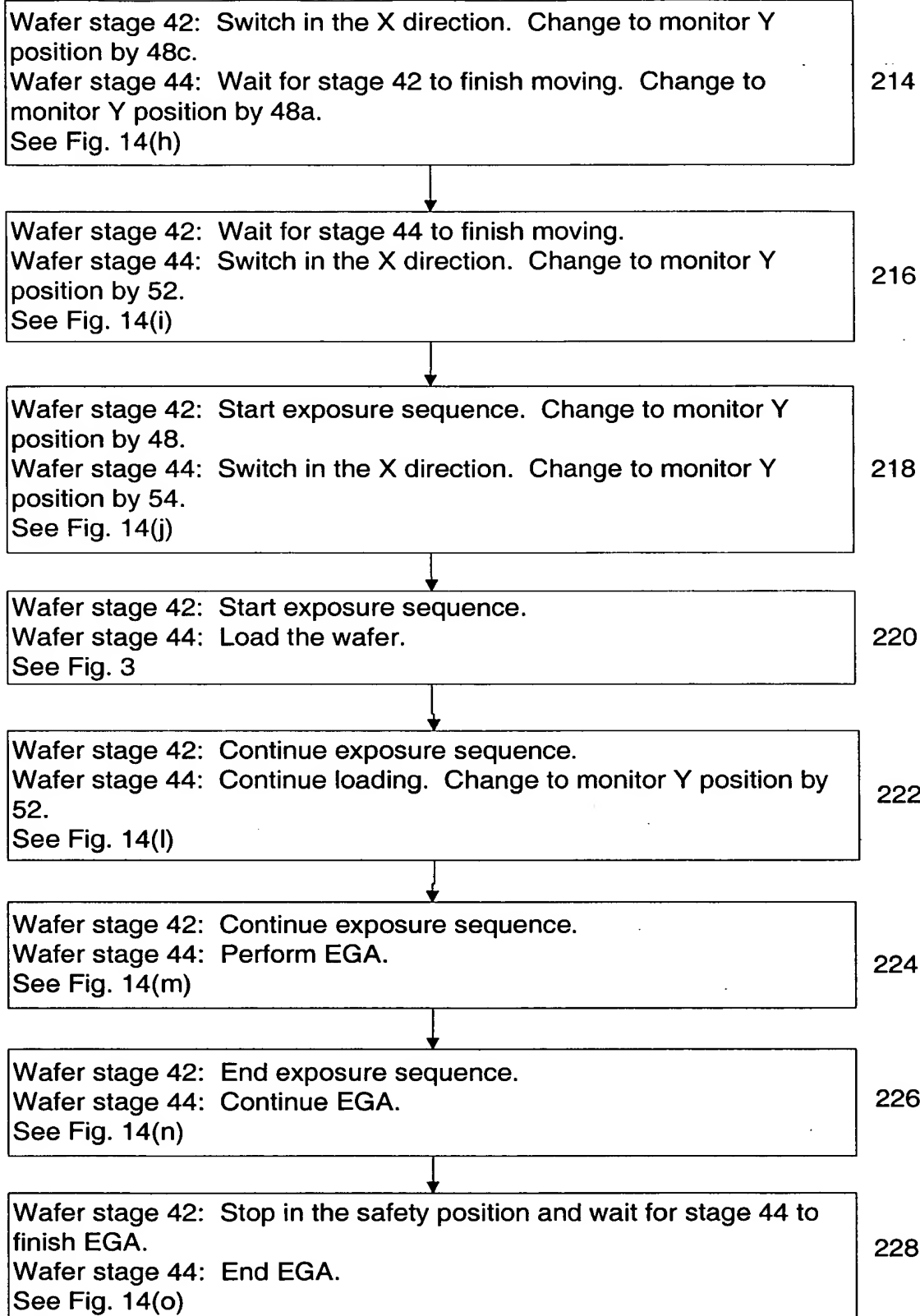
To Fig. 13(b)

Fig. 13(a)

From Step 243

FIG. 13(a)

To Fig. 13(a)
and step 200



To Fig. 13(c)

Fig. 13(b)

To Fig. 13(a)
and step 200

From Fig. 13(b) and step 228

Wafer stage 42: Stop in the safety position.
Wafer stage 44: Switch in the X direction.
See Fig. 14(p)

230

Wafer stage 42: Switch in the X direction. Change to monitor Y position by 50.
Wafer stage 44: Wait for 48a to become available to control Y position. Resume switching in the X direction.
See Fig. 14(q)

232

Wafer stage 42: Continue switching in the X direction.
Wafer stage 44: Wait in the switch X/wait position. Change to monitor Y position by 48a.
See Fig. 14(r)

234

Wafer stage 42: Continue switching in the X direction. Change to monitor Y position by 52.
Wafer stage 44: Wait in the switch X/wait position. Change to monitor Y position by 48 and Yaw by 48.
See Fig. 14(s)

236

Wafer stage 42: Continue switching in the X direction. Change to monitor Y position by 54 and Yaw by 54.
Wafer stage 44: Wait in the switch X/wait position.
See Fig. 14(t)

238

Wafer stage 42: Switch in the Y direction. Change to monitor X position by 56a.
Wafer stage 44: Switch in the Y direction. Change to monitor X position by 56c.
See Fig. 14(u)

240

To Fig. 13(d)

FIG 13(c)

200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232 234 236 238 240

To Fig. 13(a)
and step 200

From Fig. 13(c) and step 240

Wafer stage 42: Wait in the switchY/wait position then move to the loading position.
Wafer stage 44: Continue switching in the Y direction and attain the position to begin the exposure sequence. Change to monitor X position by 46.
See Fig. 14(v)

242

Yes
Continue to
process more
wafers ?
No

243

Wafer stage 42: Unload but do not reload. Change to monitor X position by 56.
Wafer stage 44: Start exposure sequence.
See Fig. 14(a)

244

Wafer stage 42: Move through the EGA movements without performing EGA, halting to avoid disturbing stage 44. Change to monitor Y position by 52 and Yaw by 56.
Wafer stage 44: Continue the exposure sequence.
See Fig. 14(b)

246

Wafer stage 42: Change to monitor Y position by 50.
Wafer stage 44: Stop at the end of the exposure sequence.
See Fig. 14(c)

248

Wafer stage 42: Switch in the Y direction. Change to monitor Yaw by 52 and 50.
Wafer stage 44: Switch in the Y direction.
See Fig. 14(d)

250

To Fig. 13(e)

Fig. 13(d)

From Fig. 13(d)

Wafer stage 42: Switch in the Y direction. Change to monitor X position by 56a.
Wafer stage 44: Pause and wait for 56c to become available to control X position.
See Fig. 14(e)

252

Wafer stage 42: Pause and wait for 46 to become available to control X position.
Wafer stage 44: Switch in the Y direction.
See Fig. 14(f)

254

Wafer stage 42: Switch in the Y direction.
Wafer stage 44: Switch in the Y direction. Change to monitor X position by 56 and Yaw by 56.
See Fig. 14(g)

256

Wafer stage 42: Switch in the X direction. Change to monitor Y position by 48c.
Wafer stage 44: Pause and wait for stage 42 to stop moving. Change to monitor Y position by 48b.
See Fig. 14(h)

258

Wafer stage 42: Pause switching in the X direction and wait for stage 44 to stop moving.
Wafer stage 44: Switch in the X direction. Change to monitor Y position by 52.
See Fig. 14(i)

260

Wafer stage 42: Change to monitor Y position by 48.
Wafer stage 44: Remove exposed wafer. Change to monitor Y position by 54.
See Fig. 14(j)

262

Fig. 13(e)

End Process

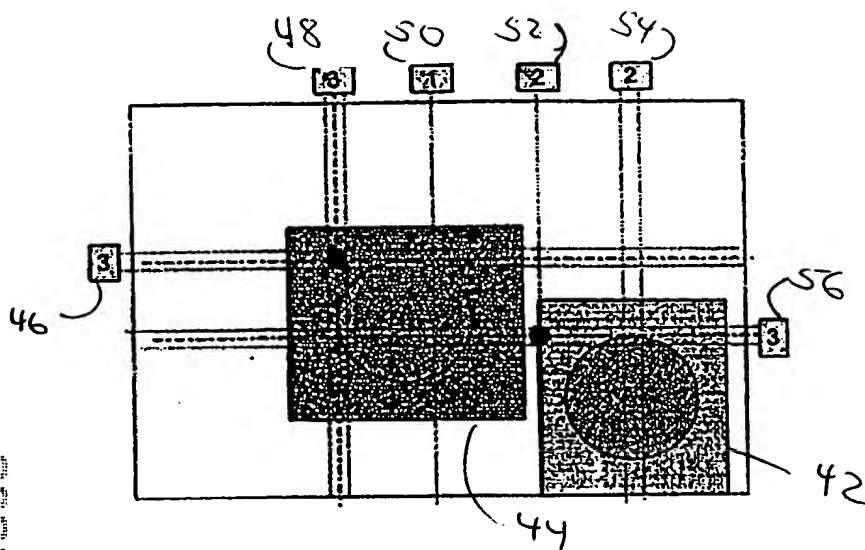


FIG.

14(a)

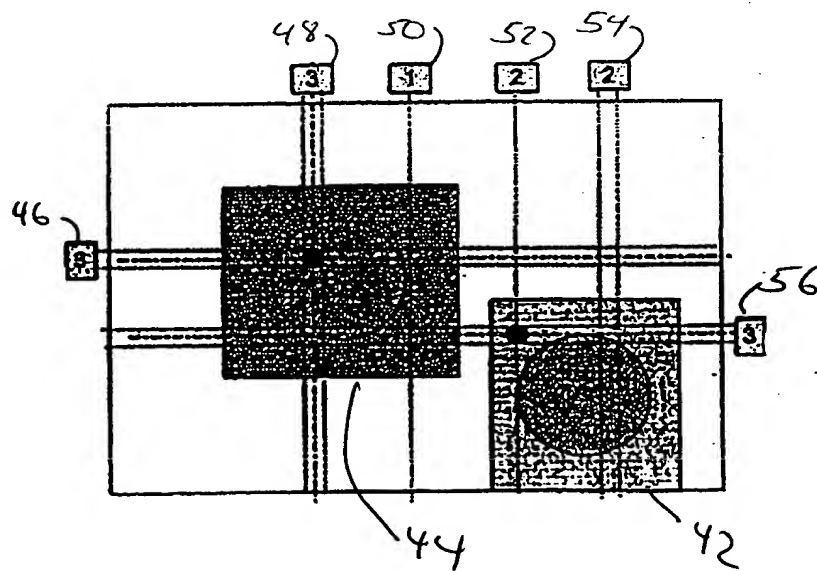


FIG.

14(b)

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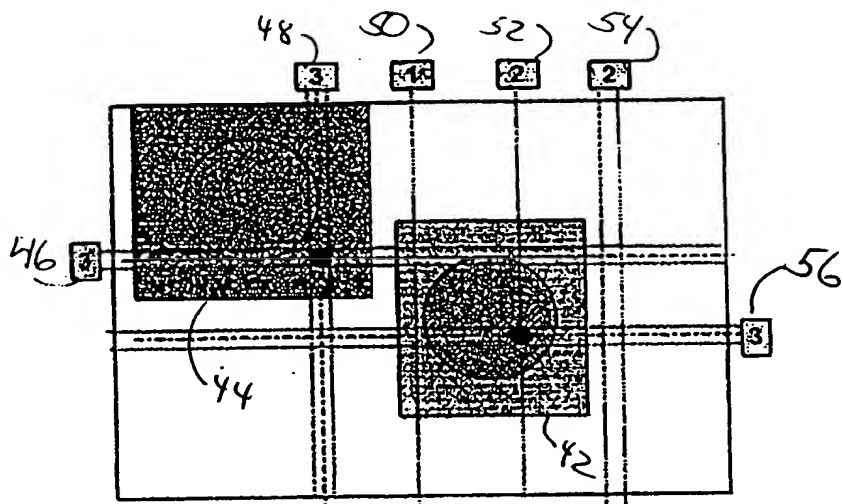


FIG.
14(c)

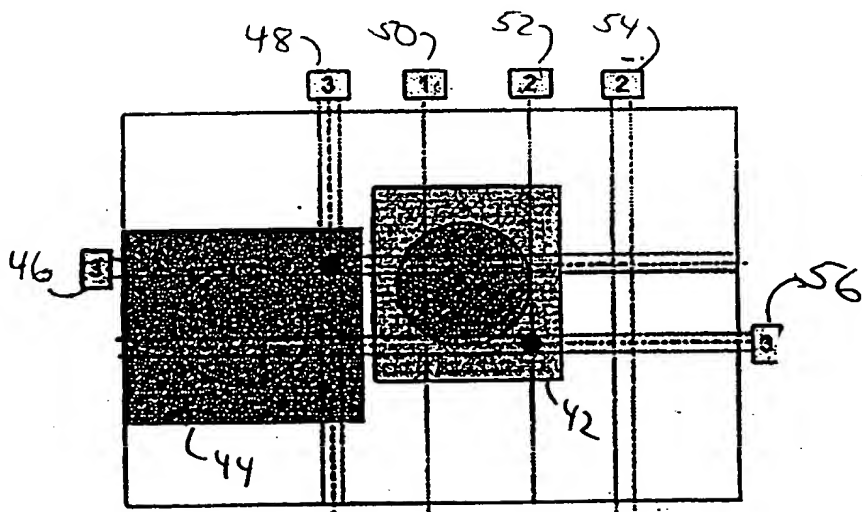


FIG.
14(d)

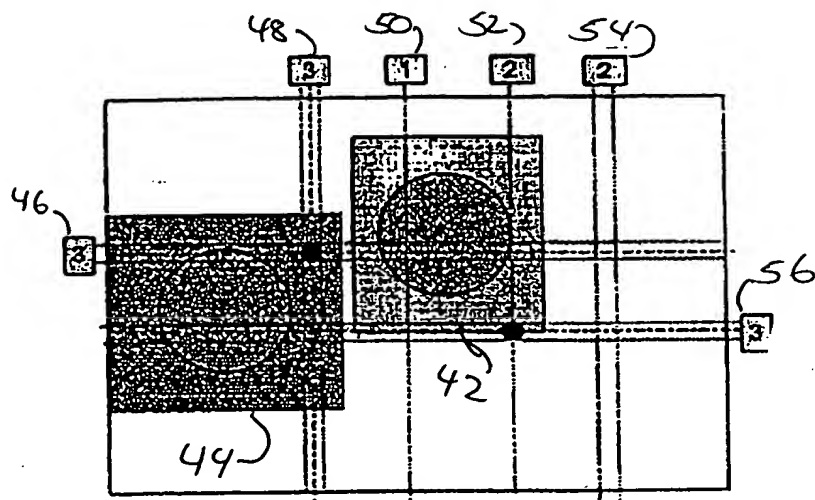


FIG.
14(e)

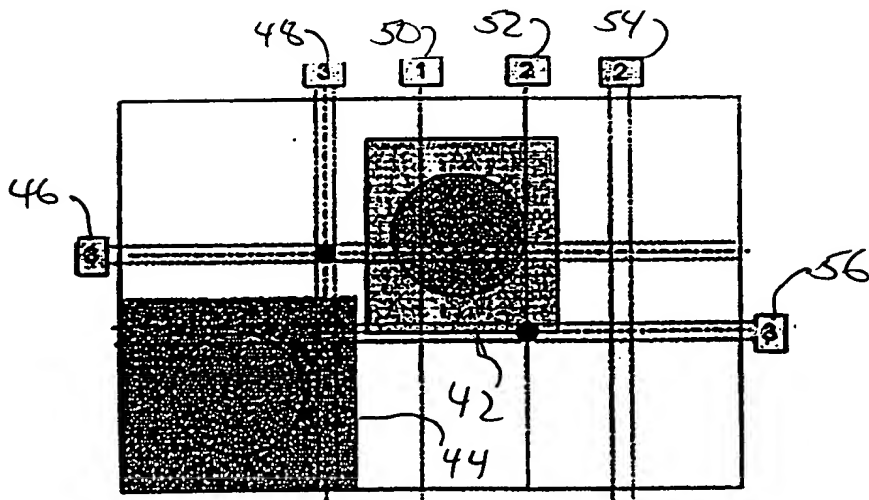


FIG.
14(f)

FIG. 14(e)

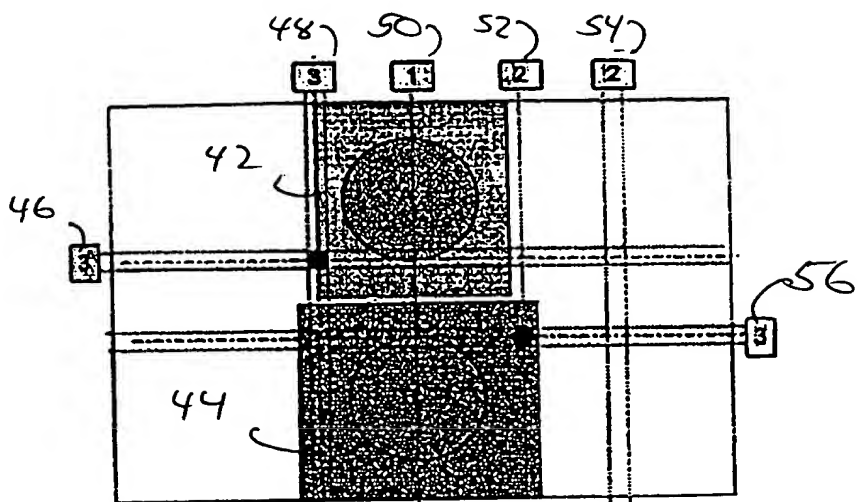


FIG.
14(i)

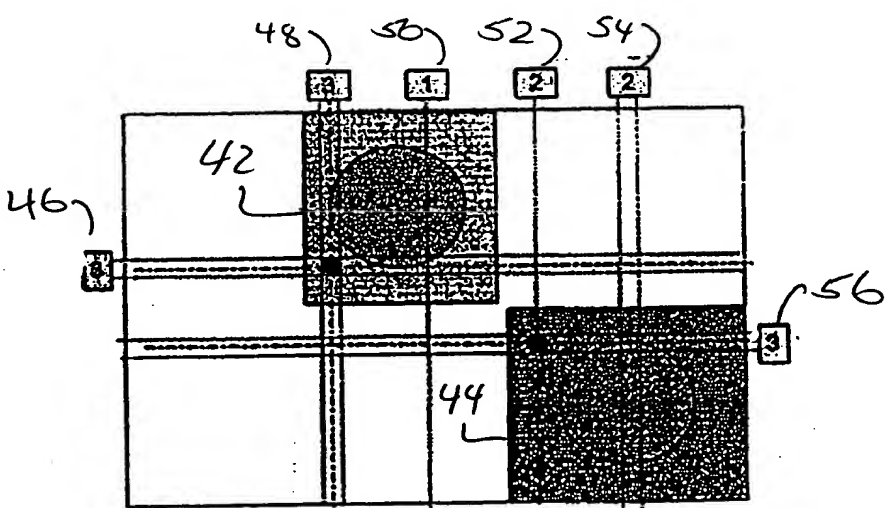
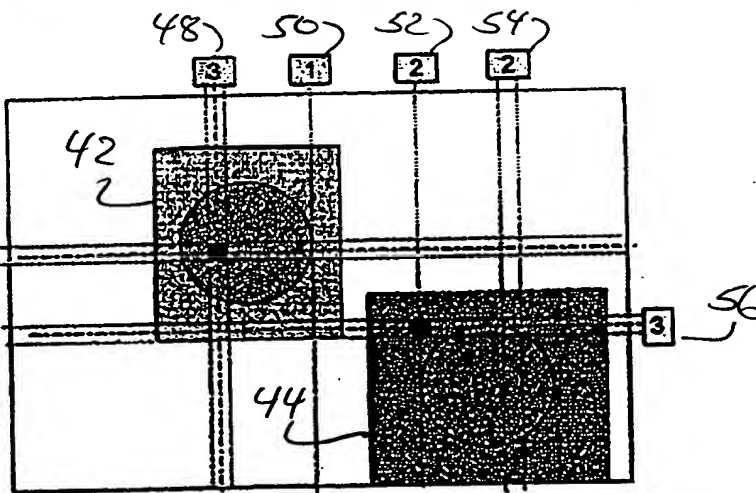
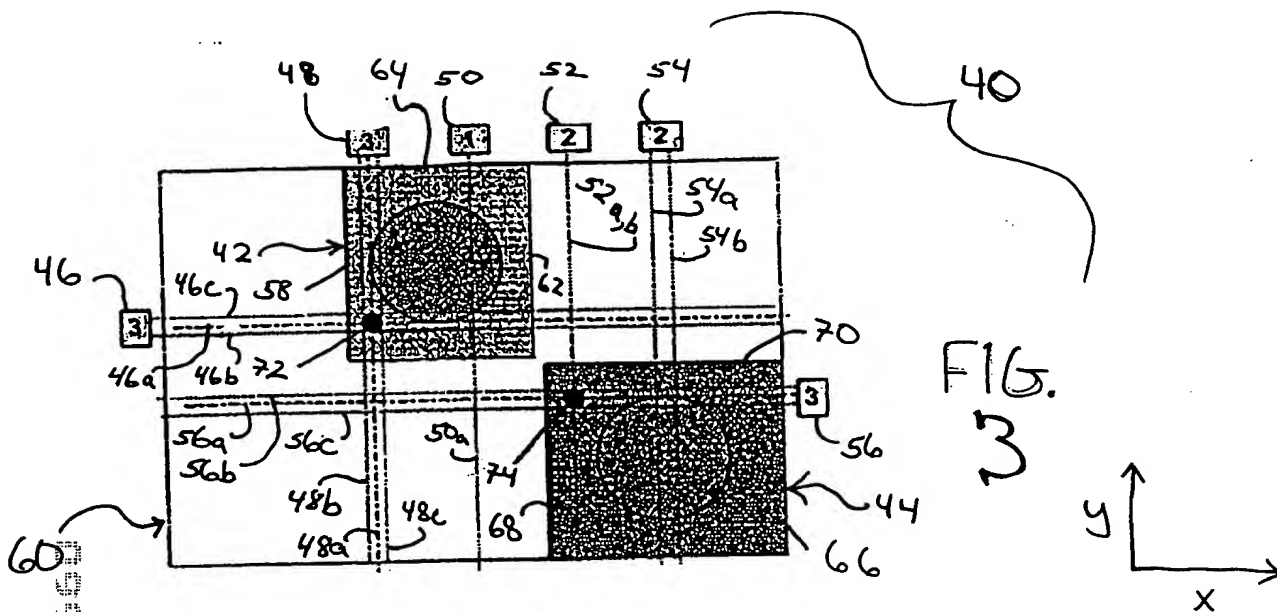
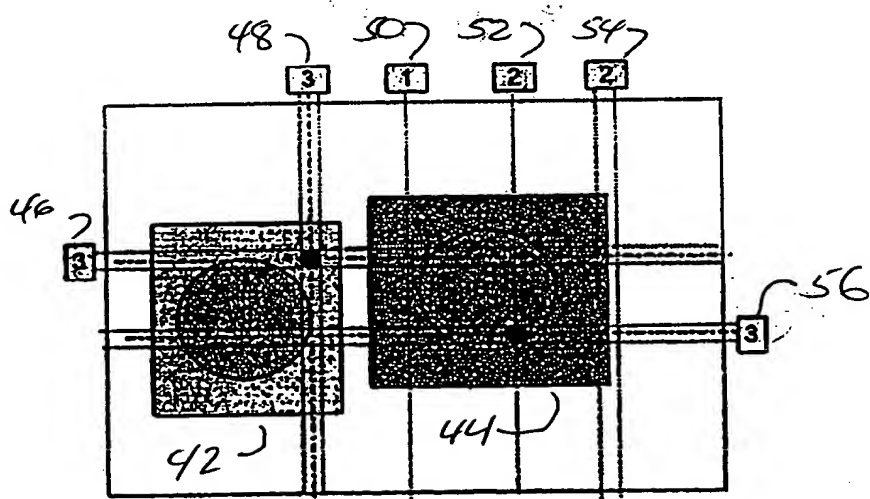
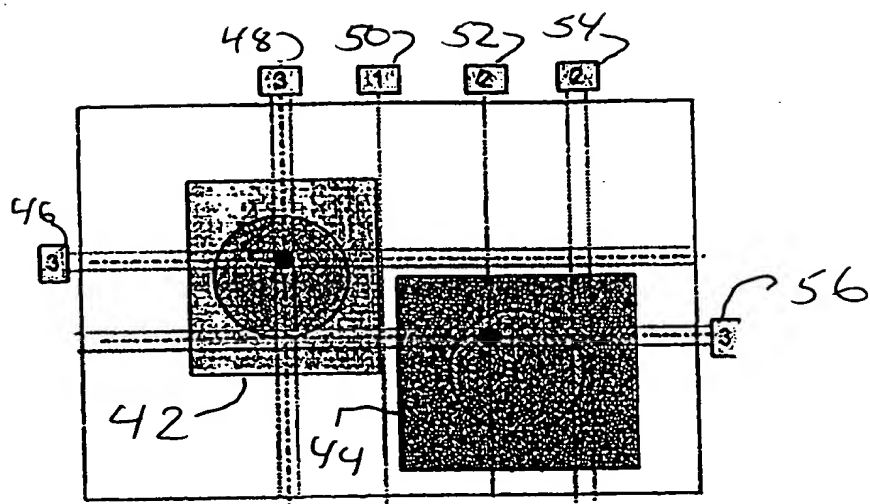


FIG.
14(j)





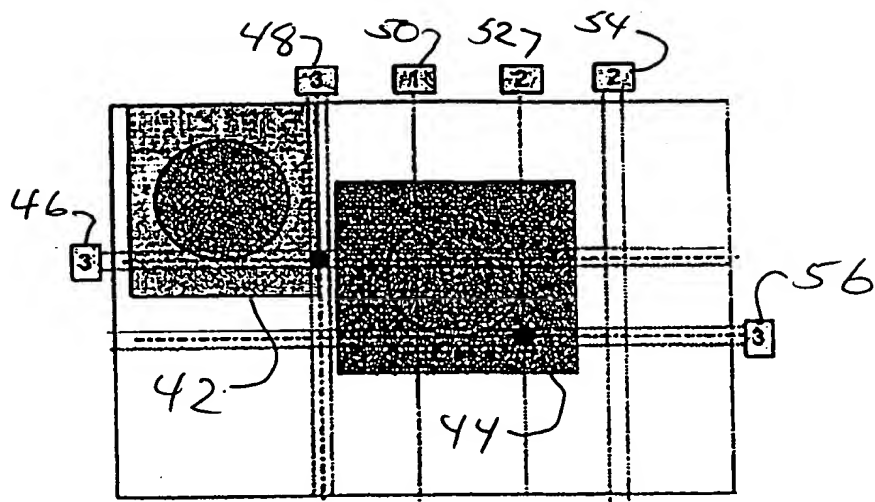


FIG.
14(O)

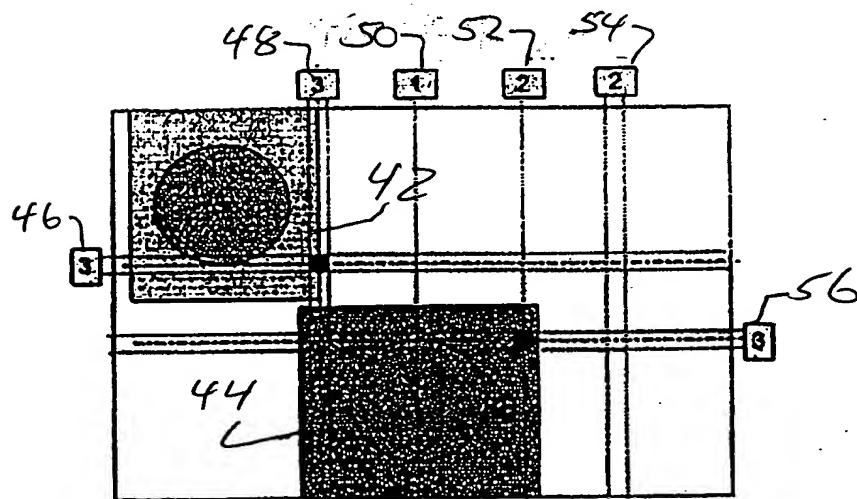


FIG.
14(P)

09560555 002101

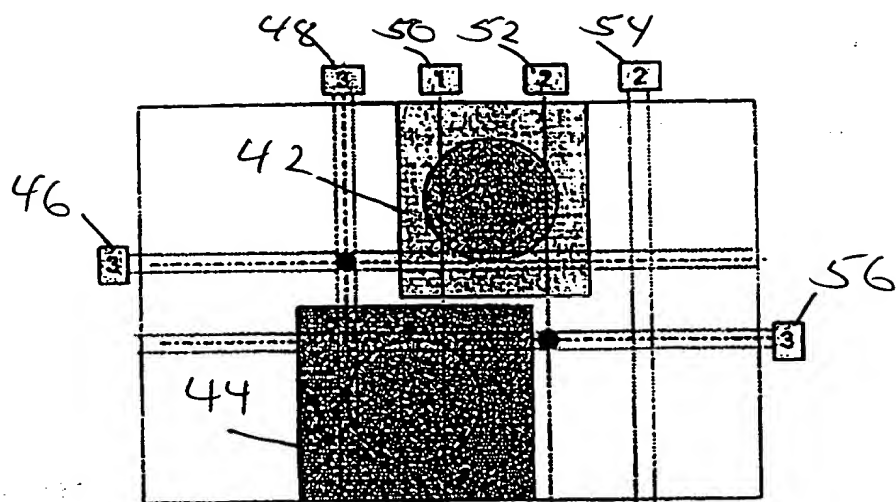


FIG.
14(s)

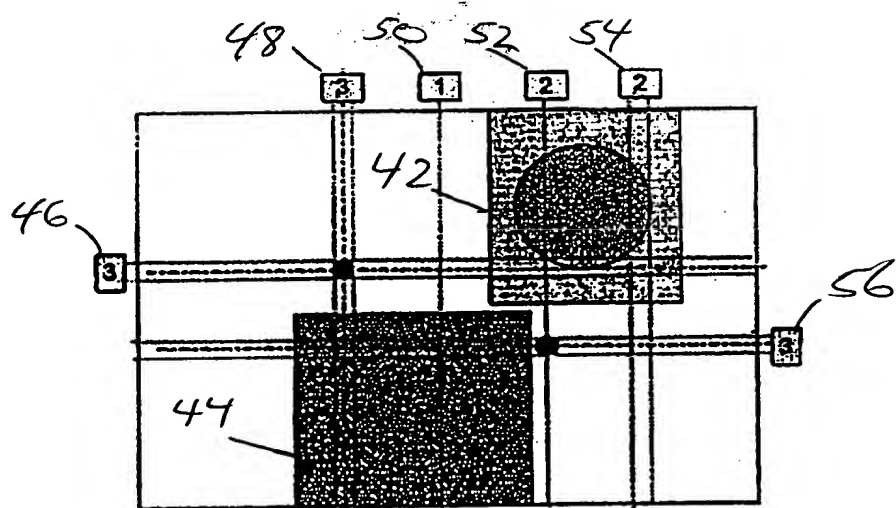


FIG.
14(t)

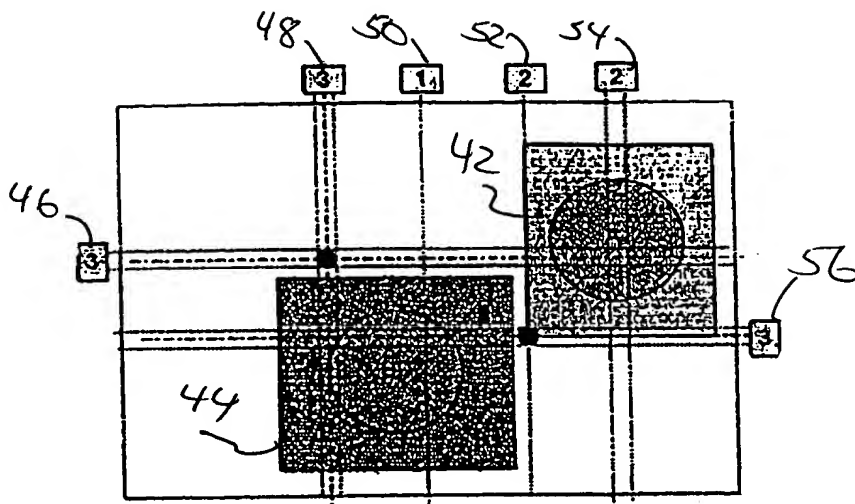


FIG.
14(u)

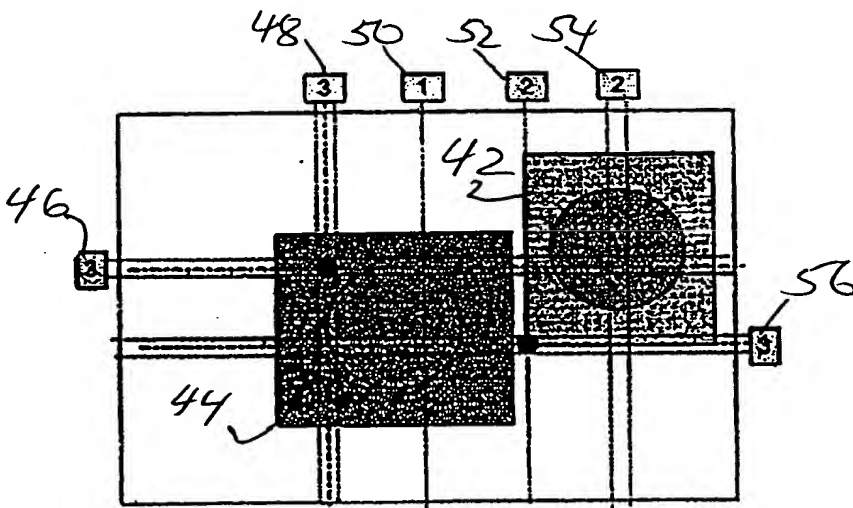


FIG.
14(v)